



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/525,487

02/23/2005

Martin Dieter Liess

NL 020808

4982

24737

7590

04/08/2008

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

KARIMI, PEGEMAN

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

04/08/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/525,487	<b>Applicant(s)</b> LIESS, MARTIN DIETER	
	<b>Examiner</b> PEGEMAN KARIMI	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed on 03/05/2008 has been entered and considered by the examiner.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liess (WO 02/37411 A1) in view of Printzis (U.S. Patent 6,525,677).

**As to claims 1, 19, and 20**, Liess teaches an apparatus (120) comprising an optical input device (129') controlled by a moving object (finger, 15) near a window (12) and an optical keyboard (121), the claimed "optical keyboard" is so broad that it can be read in the keyboard 112 or 121),

which input device (device of fig. 5a, and can be seen in a different angle in fig. 5b) comprises at least two optical sensor units (4 and 6) comprising at least two diode lasers (3 and 5) for supplying at least two measuring beams (13 and 17, page 12, lines 4-5) and converting means (photo diode, 4) for converting measuring beam radiation reflected by the object into an electric signal (Page 12, lines 14-16),

which converting means (4 and 6, fig. 6) are constituted by the combination of a laser cavity (20) and

measuring means (4 and 6) and for measuring changes in operation of the laser cavity (Page 12, lines 12-16), which are due to interference of reflected measuring beam (26) radiation re-entering the laser cavity and the optical wave in this cavity and which are representative of the movement of the object (Page 12, lines 25-34, Page 13, lines 1-5), wherein at least two paths of the at least two measuring beams (first path = path of measuring beam 13; second path = path of measuring beam 17) from the at least two diode lasers (3 and 5) to the window (12) extend through at least two light guides of the optical keyboard (Fig. 15a clearly shows light beams from diode lasers 3, 5, and 7 are guided to the window by optical fibers 72, 73, and 74) and passing through the window (as can be seen in Fig. 15a, the laser beams are guided to the window/cap 78 and pass through).

Liess does not mention the paths include mirrors. Printzis teaches at least two paths including mirrors (Horizontal path of 424 has mirrors 404, 406, and 408), vertical path of 426 has mirrors 430, 432, and 434), (Fig. 5). Therefore it would have been obvious to one of ordinary skilled in the art at the time the invention was made to have added the mirrors of Printzis to the at least two light guides of the optical keyboard of Liess because to have the light beams transmit to the window through a light path without interfering with each other.

**As to claim 2**, Liess et al. does not teach measuring beam of the first and second sensor. Printzis (Fig. 1) teaches the apparatus wherein the at least two sensor units (134 and 132), which are arranged relative to the optical keyboard (col. 5, lines 46-

Art Unit: 2629

47 and lines 57-59) such that the at least two measuring beams of the first and second sensor unit (photo diode, 132 and 134) passes on its way to the device window (i.e. 320, 322, 324, 318, etc.), (the window is the surface area of a cavity 200, fig. 2, located at a key location within the keypad, which has a top opening for a user to insert a finger) the positions of a first set of keys and the positions of a second set of keys (col. 3, lines 40-42, and col. 4, lines 26-30), respectively, the first set and the second set (rows and columns) together comprising all keys to be controlled (see Fig. 1). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the two sensor units of Printzis to the input device of Liess because the two sensors of Printzis configured to respond to a change in a received light quantity and to provide an electrical signal in response to a selection of a key at a key location (col. 14, lines 29-32).

**As to claim 3**, Printzis teaches the input device comprises at least three sensor units (410, 412, 416), which are arranged relative to the optical keyboard such that at least three measuring beam of first (410), second (412) and third sensor (416) units pass on their way to the device window (col. 12, lines 43-48), positions of a first, a second and a third set of keys (row, column and diagonal), respectively, the first, second and third set comprising all keys to be controlled (See Fig. 5).

**As to claim 4**, Liess et al. (Fig. 12) teaches the at least one sensor unit of the two sensor units (4) is adapted to measure both a scroll movement and a click movement (Page 23, lines 13-17) and provided with additional means (7, 8, etc), which

allow establishing the presence of an object on the window of the device (Fig. 12, the 3<sup>rd</sup> diode laser and photo sensor senses the presence of object 15 and outputs a click).

**As to claim 5**, Liess teaches the additional means (4, 22, 21, etc.) are constituted by means for establishing whether the reflected measuring beam radiation (4), (Page 12, lines 29-30) shows an amplitude variation of a frequency (Laser radiation) lower than the frequencies of variations caused by a scroll movement (re-entering radiation), (Page 15, lines 33-34 and Page 16, line 1).

**As to claim 6**, Liess teaches at least one sensor unit (Fig. 5a) comprises a first radiation-sensitive detector (monitor diode, 6) for measuring variations in the laser cavity (Page 14, lines 10-14), wherein the additional means (10, 12, 18, etc.) is constituted by a second radiation-sensitive detector (4) arranged for receiving measuring beam radiation (Page 12, lines 12-16), which is non-incident on the laser cavity (Fig. 6, Photo diode 4 is located outside of the laser cavity).

**As to claim 7**, Liess teaches the additional means (18, 19) are constituted by electronic means (8, 7) for detecting a component in an output signal of said measuring means (Z-direction, Page 17, lines 23-27).

**As to claim 8**, Liess teaches at least one sensor unit (Fig. 5a) is activated by activation pulses (Page 16, lines 29-32) and;

the measuring means (photo diodes) perform measurements during time intervals determined by the activation pulses (first and second half periods, page 16, lines 26-28), wherein

the additional means comprises counting means and comparing means (Electronic processing circuit) to establish whether a number of undulations in the output signal (forward or backward direction) measured during a first half and a second half of a said time interval are equal (Page 15, lines 23-24).

**As to claim 9**, Liess et al. discloses the measuring means (4 and 6) of the input device are means for measuring a variation of an impedance of the laser cavity (Page 12, lines 12-16)

**As to claim 10**, Liess teaches the measuring means is a radiation-sensitive detector (4 and 6) for measuring radiation emitted by one laser diode (3), (Page 12, lines 12-14) of the at least two diode lasers (3 and 5).

**As to claim 11**, Liess (Fig. 6) teaches a radiation-sensitive detector (4) is arranged at the rear side of the laser cavity (Page 12, lines 21-23).

**As to claim 12**, Liess teaches the second detector (6) is arranged at a side of the laser cavity (measuring beam and second detector are located side by side on the base) where the measuring beam is emitted (5).

**As to claim 13**, Liess et al. discloses the apparatus is a mobile phone (80), (Page 8, lines 30-32).

**As to claim 14**, Liess et al. discloses the apparatus is a cordless phone (80), (Page 8, lines 30-32).

**As to claim 15**, Liess et al. discloses the apparatus is a laptop computer (110), (Page 8, lines 30-32).

**As to claim 16**, Liess et al. discloses the apparatus is a hand-held computer (110), (Page 8, lines 30-32).

**As to claim 17**, Liess et al. discloses the apparatus is a keyboard for a desk computer (121), (Page 8, lines 30-32).

**As to claim 18**, Liess et al. discloses the apparatus is a remote control for a TV set (107), (Page 8, lines 30-32).

**As to claims 21, 22, and 23**, Liess et al. teaches the at least two guides (72, 73, and 74) are independent from each other and meet only at the window (the fiber optics are independent from each other and connect to diodes 3, 5, and 7; the fiber optics meet at the top of the window/cap), (fig. 15a).

### ***Response to Arguments***

4. Applicant's arguments, filed on 03/05/2008, with respect to the rejection(s) of claim 1-23 have been fully considered but are not persuasive.

Applicant argues that Printzis does not have any window for any moving object. As can be seen in Fig. 2, the window is the surface area of a cavity 200; located at a key location within the keypad, which has a top opening for a user to insert a finger.

Applicant argues that "two paths that include mirrors and pass through a window is nowhere taught or suggested in Liess, Printzis and combination. Liess teaches at



Art Unit: 2629

least two paths of the at least two measuring beams (first path = path of measuring beam 13; second path = path of measuring beam 17) from the at least two diode lasers (3 and 5) to the window (12) extend through at least two light\_guides of the optical keyboard (Fig. 15a clearly shows light beams from diode lasers 3, 5, and 7 are guided to the window by optical fibers 72, 73, and 74) and passing through the window (as can be seen in Fig. 15a, the laser beams are guided to the window/cap 78 and pass through). And Printzis teaches at least two paths including mirrors (Horizontal path of 424 has mirrors 404, 406, and 408), vertical path of 426 has mirrors 430, 432, and 434), (Fig. 5). Therefore it would have been obvious to one of ordinary skilled in the art at the time the invention was made to have added the mirrors of Printzis to the at least two light guides of the optical keyboard of Liess because to have the light beams transmit to the window through a light path without interfering with each other.

### ***Inquiry***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEGEMAN KARIMI whose telephone number is (571)270-1712 and direct fax number is (571) 270-2712. The examiner can normally be reached on Monday-Thursday 8:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pegeman Karimi/  
Examiner, Art Unit 2629  
March 28, 2008

/Chanh Nguyen/  
Supervisory Patent Examiner, Art  
Unit 2629